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FOR

METHOD AND APPARATUS FOR MASKING PRIVATE MAILING ADDRESS INFORMATION BY MANIPULATING DELIVERY TRANSACTIONS

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METHOD AND APPARATUS FOR MASKING PRIVATE MAILING ADDRESS INFORMATION BY MANIPULATING DELIVERY TRANSACTIONS

FIELD OF THE INVENTION

The present invention relates to the field of online commerce services. More specifically, the present invention relates to methods and apparatuses for delivering online purchased goods or merchandises, while maintaining private the mailing addresses of the purchaser or the designated recipient of the purchased goods.

BACKGROUND OF THE INVENTION

The Internet is a well-known collection of public and private data communication and multimedia networks that operate using common communication protocols to form a world wide network of networks. Recently there has been an explosion in the availability of "virtual storefronts," e.g., online commerce sites, reachable over the Internet. This rapid growth is due, in part, to the availability of fast, reliable and affordable computing devices and the general simplification of networking hardware and configuration. Thus, consumers and businesses alike now have access to hardware that makes effective online commerce commercially practicable.

To facilitate conduct of online transactions with their customers, a business typically sets up an e-commerce web site, and makes it accessible to online customers, as part of the World Wide Web (which is a logical overlay of

the Internet). Each web site typically includes a number of web pages, developed using programming languages such as Hypertext Markup Language (HTML). The web pages are typically augmented with client side applets, developed using programming languages/techniques, such as Java, and ActiveX, as well as server side scripts, developed using programming languages/techniques, such as JavaScript and CGI. The web pages are typically accessed using common messaging and communication protocols, such as the Hypertext Transfer Protocol (HTTP) and Transmission Control Protocol/Internet Protocol (TCP/IP).

To make a purchase via a web site, the consumer executes a generic agent, such as a "browser," e.g. Internet Explorer or Netscape Navigator, or an equivalent network aware application program that is configured to communicate with a business web site. The consumer locates a particular product by interacting with the product web pages, and then proceeds to a "check out" web page (or equivalent) to process a purchase transaction. At this point, the consumer typically enters his/her mailing address and other data sufficient to identify the consumer, render payment, and allow delivery of goods to occur, unless the consumer has previously provided the information, e.g. by registering with the business.

Consumer information, such as mailing addresses are considered valuable from the businesses' point of view because advertising and so forth use mailing addresses to send catalogues and marketing information to lure more consumers. Often times, businesses may offer services or products in exchange

for, not money, but for consumer information such as mailing addresses and so forth. Because of the value associated with consumer information such as mailing addresses, many businesses, including online businesses, will often times, sell this information to other businesses.

As a result, soon after a consumer makes an online purchase from a particular online business, and has the purchase delivered to his/her mailing address, the consumer may find himself or herself receiving advertising and other catalogues from unsolicited businesses filling his/her mailbox.

Thus, what is needed is an environment that provides consumers the ability to purchase products online and have the products delivered to the consumers or designated recipients, without necessarily disclosing their mailing addresses.

BRIEF DESCRIPTION OF DRAWINGS

The present invention is illustrated by way of example and not by way of limitation in the figures of the accompanying drawings, in which the like references indicate similar elements and in which:

Figure 1 illustrates a network view of the present invention for facilitating a purchaser in receiving delivery of goods purchased online, without having to reveal the purchaser's real mailing address, in accordance with one embodiment;

Figure 2 illustrates the method of the present invention in further details, including the employment of pre-established mailboxes with mailbox services, in accordance with one embodiment;

Figure 3 illustrates an alternate embodiment of the present invention in further details, including the employment of virtual delivery addresses;

Figure 4 illustrates the operational flow of the relevant aspects of the delivery address service for facilitating delivery of online purchased goods to the purchaser or a designated recipient of the purchaser, under the embodiment of **Fig. 2**;

Figure 5 illustrates the operational flow of the relevant aspects of the delivery address service for facilitating delivery of online purchased goods to a purchaser or a designated recipient of the purchaser, under the embodiment of **Fig. 3**; and

Figure 6 illustrates an example server suitable for use to practice the delivery address service of the present invention, in accordance with one embodiment.

DETAILED DESCRIPTION OF THE INVENTION

In the following description, various aspects of the invention will be described. However, the invention may be practiced with only some or all aspects of the invention. For purposes of explanation, specific numbers, materials and configurations are set forth in order to provide a thorough understanding of the invention. However, the invention may be practiced without the specific details. In other instances, well known features are omitted or simplified in order not to obscure the invention.

Parts of the description will be presented using terms such as end-user interfaces, buttons, and so forth, commonly employed by those skilled in the art to convey the substance of their work to others skilled in the art. Parts of the description will be presented in terms of operations performed by a computing device, using terms such as submitting, requesting, selecting, confirming and so forth. As well understood by those skilled in the art, these quantities and operations take the form of electrical, magnetic, or optical signals capable of being stored, transferred, combined, and otherwise manipulated through mechanical and electrical components of a digital system. The term digital system includes general purpose as well as special purpose computing machines, systems, and the like, that are standalone, adjunct or embedded.

Various operations will be described in turn in a manner that is most helpful in understanding the invention, however, the order of description should not be construed as to imply that these operations are necessarily order dependent. Furthermore, the phrase "in one embodiment" will be used

repeatedly, however the phrase does not necessarily refer to the same embodiment, although it may.

In various embodiments of the invention, a consumer is able to purchase and receive goods from web sites without revealing private delivery information, such as mailing address, to a web site/business from whom the consumer purchases goods. For the purpose of this application, the terms "purchaser" and "consumer" are synonymous.

Figure 1 illustrates a network view of the present invention, in accordance with one embodiment. As illustrated, an online consumer or purchaser, such as purchaser **100**, is communicatively coupled to various e-commerce web sites, such as business web site of business **102** hosted by server **103**, via his/her client device **101** and network **104**. The business web site may e.g. be a general e-commerce retail site, an online direct sales channel of the business, or other business-to-business commerce sites. Client device **101** may comprise a computing device, such as a personal computer, which operates on behalf of user **100**. In alternate embodiments, client device **101** may be a personal digital assistant (PDA), a wireless mobile telephone, or other appliance devices of like kind, instead.

For ease of understanding, it is assumed that each of the relevant business network nodes of interest to which client device **101** may communicate provide a "web site" for engaging in commercial transactions. For the present application, the phrase "web site" generally refers to a network "presence"

directly maintained by a business, as well an indirect presence, totally or partially maintained by "e-commerce services" on behalf of a business.

Also shown in **Fig. 1**, in accordance with the present invention, a delivery address service **106** is also in communication with purchaser **100**, via their respective equipment, i.e. server or servers **107** and client device **101**, through network **104**. Purchaser **100** is a subscriber of the delivery/mailing address privacy protection service of delivery address service **106**, which advantageously protects the privacy of the "real" delivery or mailing address of user **100**. For the illustrated embodiment, the privacy enhanced delivery service is offered by the delivery address service **106** in conjunction with delivery service **108**. In various embodiments, the services, i.e. delivery address service **106** and delivery service **108**, may be offered by the same or different business entities. While typically purchaser **100** will be charged for a fee for the privacy enhanced delivery service, however the present invention may be practiced without purchaser **100** being charged for the service. For example, the cost for providing the privacy enhanced delivery service may be borne by the e-commerce businesses **102** or alternatively by delivery service **108** to attract customers.

In one embodiment, once purchaser **100** subscribes to the privacy enhanced delivery address service offered by delivery address service **106** (in conjunction with delivery service **108**), delivery address service **106** facilitates commercial transactions; in particular, delivery of purchased goods to purchaser **100**, by generating substitute delivery addresses that purchaser **100** may use (in lieu of his/her own personal private mailing address), when engaging in

commercial transactions with online businesses, such as business **102**. The phrase "substitute delivery addresses" refers to delivery addresses and/or associated control information that are owned and/or controlled by the delivery address service **106**. The substitute delivery address (and its associated control information) are temporarily assigned to purchaser **100** to substitute for the personal and/or private mailing address of the purchaser **100**, while purchaser **100** remains a service subscriber.

Also in communication with the delivery address service' server **106** and e-commerce business' server **102**, by way of network **104**, is the equipment, more specifically, server **109** of a delivery service **108**. Delivery service **108** may be a private delivery service such as Federal Express (FedEx®), United Parcel Service (UPS®), and so forth. Business **102** utilizes delivery service **108** to deliver goods purchased from the business to purchaser **100**.

In **Fig. 1**, associated with business **102**, delivery address service **106**, and delivery service **108**, more specifically, their respective servers, **103**, **107** and **109**, are data storages, such as databases **116-118**, that can store delivery addresses for use by the delivery process of the present invention. As will be described in further detail later, in one embodiment, databases **116-118** may include tables or views that correlate delivery address information.

Figure 2 illustrates the method of the present invention in further details, in accordance with one embodiment. For the illustrated embodiment, delivery address service **106** pre-establishes a number of mailboxes with a mailbox service **205**, such as Mailboxes Etc., the U.S. Postal Service, and so forth. The

substitute delivery address **220**, which delivery address service **106** provides to user **100**, may be one of these pre-established mailboxes at mailbox service **205**.

In **Fig 2**, delivery address service **106** receives a subscription request from user **100** (operation **21**). In response, the subscription request is processed by delivery address service **106**, resulting in an exchange of relevant information between purchaser **100** and delivery address service **106**. In particular, a mailing address **225** of purchaser **100** is provided to, and received by delivery address service **106**. Typically, mailing address **225** of purchaser **100** is the address information that purchaser **100** desires to maintain private, and not wish to disclose to online businesses.

Further, a substitute delivery address **220** is provided by delivery address service **106** to purchaser **100** (operation **22**) for his/her use to conduct commerce with online businesses, such as business **102**. In one implementation of this embodiment, substitute delivery address **220** is advantageously selected to be proximately located to purchaser **100**. In one implementation, the selection is made, based at least in part on the mailing address provided by purchaser **100**.

Also illustrated in **Fig. 2**, is an exemplary data structure **230** suitable for use to store data associated with mailing address **225** and substitute delivery address **220** within database **118** of delivery address service **106**. For the illustrated embodiment, data structure **230** is a table or view including a number of columns for storing various information associated with purchaser **100**, such as, but not limited to the substitute delivery address **220** assigned to the mailing address **225** in order to correlate the two addresses. Table/view **230** is illustrated

as a single table/view for ease of understanding. In alternate embodiments, multiple tables/views or other data structures may be employed for storing the various data regarding delivery address and associated information of users **100**.

In **Fig. 2**, once the purchaser **100** receives substitute delivery address **220**, purchaser **100** may shop online with e.g. business **102**, using the assigned substitute delivery address **220** (operation **23**). Purchaser **100** may provide substitute delivery address **220** to business **102** during registration, if registration is required, or in the alternative, during the "check out" process. Optionally, purchaser **100** may request, and delivery address service **106** may assign more than one substitute delivery address **220** for use by purchaser **100**, as purchaser **100** may desire to register/use different delivery addresses with different online businesses.

Shown also in **Fig. 2**, is business **102** storing in its database **116** delivery address **220** of purchaser **100**. Note that, business **102** in general, does not have possession of mailing address **225** of purchaser **100**. As alluded to earlier, substitute delivery addresses **220**, in general, are assigned for use by purchaser **100** for a temporal duration, while purchaser **100** remains a subscriber of the services offered by delivery address service **106**.

In one embodiment, the assignment of a substitute delivery address **220** may also include the assignment of a substitute email address (not shown) for purchaser **100**. The substitute email address may designate an email address of delivery address service **106** as the recipient of any electronic communication, and further protect the email address of purchaser **100**. The association

between the assigned substitute email address and the user's actual email address may in like manner be stored in the earlier described table/view data structure **230**. Accordingly, electronic communication such as order confirmation and so forth, between business **102** and purchaser **100** may also be facilitated by delivery address service **106** without revealing the email address of purchaser **100**.

Once purchaser **100** purchases goods **210** for delivery, in the embodiment shown in **Fig. 2**, the purchaser **100** receives a confirmation of the purchase from business **102** (operation **24**). The confirmation may include information such as, but not limited to, identity of business **102**, quantity, description, and method of delivery for purchased goods **210**, in particular, the delivery service utilized by business **102**.

As alluded to earlier, the confirmation may be received by purchaser **100** directly, or by way of the substitute email address of delivery address service **106**. In the former embodiment, the confirmation information is also relayed to delivery address service **106** by purchaser **100** (operation **25**). Alternatively, for the later embodiment, delivery address service **106** may retain a copy of the relevant information before forwarding the confirmation information to purchaser **100**.

Thereafter, delivery address service **106** awaits notification, from mailbox service **205**, that purchased goods **210** have arrived at the substitute delivery address **220** at mailbox service **205**. In the meantime, online business **102** communicates the delivery information to delivery service **108** (operation **26**). As

discussed above, delivery service **108** may be any type of delivery service, for example, UPS. This delivery information, including substitute delivery address **220** may be stored in database **117** of delivery service **108**. In response, delivery service **108** proceeds to deliver purchased goods **210** to purchaser **100** at substitute delivery address **220** via a means of transportation, such as delivery truck **215** (operation **27**).

Upon delivery of the purchased goods **210** by delivery truck **215** to the assigned substitute mailing address (i.e. a mailbox) **220** within mailbox service **205**, mailbox service **205** informs delivery address service **106** of the arrival of the goods at mailbox service **205**. In turn, for the illustrated embodiment, delivery address service **106** notifies purchaser **100** that the purchased goods **210** have arrived at subscription address **220** within mailbox service **205**, and are ready for pick-up.

In alternate embodiments, mailbox service **205** may notify purchaser **100** directly (on behalf of delivery address service **106**). Preferably, mailbox service **205** notifies delivery address service **106** of the arrival as well as of the pick up by purchaser **100**.

In **Fig. 2**, for ease of understanding, the means of transportation shown is a delivery truck; however, in practice, the means of transportation may include other transportation means such as, but not limited to, air transport. Additionally, beside the conventional TCP/IP based Internet, all or part of the communications between purchaser **100**, delivery address service **106**, business **102**, and

delivery service **108** facilitated through network **104** may be facilitated over conventional and/or wireless telephony.

As a result, a purchaser or consumer **100** may purchase goods online from a business web site, and receive the purchased goods without disclosing the user's address to the business. While on the surface, a purchaser or consumer may on its own arrange for such mailbox on his or her own for e-commerce transaction to shield his or her real mailing address, however, the pre-arrangement and subsequent automatic assignment to purchaser subscribers by delivery address service **106** offers the advantage of eliminating the need of the purchaser subscribers from having to make the arrangement on their own. Moreover, by pre-arranging for the mailboxes in bulk, it is expected that delivery address service **106** will be able to make available such mailbox services to purchaser **100** at a cost that is more economical than purchaser **100** can achiever on his/her own. Further, as earlier described, in one implementation, delivery address service **106** selects a mailbox that is proximately located to purchaser **100** for assignment, based at least in part on the mailing address of purchaser **100**. Such proximate assignment also alleviates purchaser **100** the burden from having to research for the "most" convenient mailbox location. Additionally, the present invention provides for automatic notification of the arrival of the purchased goods, a service otherwise not available if purchaser **100** has arranged for the mailbox service on his/her own.

Before proceeding to describe another embodiment of the present invention, it should also be noted that while for ease of understanding, the

present invention, in particular, the embodiment of **Fig. 2**, has been described with the purchased goods being delivered to the purchaser, the present invention is not so limited. The present invention may also be practiced to protect the privacy of the mailing address of any recipient designated by purchaser **100**. For example, if purchaser **100** is purchasing the good for another party who is also a subscriber of delivery address service **106**, purchaser may provide the substitute delivery address assigned by delivery address service **106** to the recipient, when "checking out" the purchased goods, and specifying the identity and address of the receiving party.

Figure 3 illustrates an alternate embodiment of the method of the present invention. The embodiment is similar to the earlier described embodiment of **Fig. 2**, but differs in that virtual delivery addresses are employed, in lieu of the pre-established mailboxes of **Fig. 2**. Each virtual delivery address is a fictitious delivery address, however it either contains a particular identifier (e.g. a special 9-digit zip identifiable as the zip of delivery address service **106**) or laid out in a particular format (e.g. containing a "c/o" line naming delivery address service **106**), allowing delivery service **108** to recognize that the goods to be delivered is associated with a subscriber of delivery address service **106**. The embodiment is particularly suitable for e-commerce transaction with online businesses where the purchaser may select the delivery service, e.g. between U.S. Postal Service, versus Federal Express or United Parcel Service and so forth.

As with the embodiment of **Fig 2**, delivery address service **106** receives a subscription request from user **100** (operation **31**). In response, the subscription request is processed by delivery address service **106**, resulting in an exchange of relevant information between user **100** and delivery address service **106**. As before, a mailing address **225** of user **100** is provided to, and received by delivery address service **106**. Again, typically, mailing address **225** of user **100** is the address information that purchaser **100** desires to maintain private, and not wish to disclose to online businesses. Further, a virtual (fictitious) delivery address is provided by delivery address service **106** to purchaser **100** (operation **32**) for his/her use as substitute delivery address **221** to conduct commerce with online businesses, such as business **102**.

Similar to the embodiment of **Fig. 2**, exemplary data structure **230** is used to store data associated with mailing address **225** and substitute delivery address **221** within database **118** of delivery address service **106**. Data structure **230** includes a table or view having a number of columns for storing various information associated with purchaser **100**, such as, but not limited to the substitute delivery address **221** assigned to the mailing address **225** in order to correlate the two addresses. As before, table/view **230** is illustrated as a single table/view for ease of understanding. In alternate embodiments, multiple tables/views or other data structures may be employed for storing the various data regarding delivery address and associated information of purchasers **100**.

As in **Fig. 2**, once purchaser **100** receives substitute delivery address **220**, purchaser **100** may engage in online purchasing, e.g. with business **102**, using

the assigned substitute delivery address **221** (operation **33**). Purchaser **100** may provide substitute delivery address **220** to business **102** during a registration process with business **102** or during "check out" time. Again, purchaser **100** may request, and delivery address service **106** may assign more than one substitute delivery address **221** for use by purchaser **100**, as purchaser **100** may desire to register/use different delivery addresses with different online businesses.

As in **Fig. 2**, business **102** stores in its database **116**, delivery address **221** of purchaser **100**. Again, business **102** in general, does not have possession of mailing address **225** of purchaser **100**. As alluded to earlier, substitute delivery addresses **221**, in general, are assigned for use by purchaser **100** for a temporal duration, while purchaser **100** remains a subscriber of the services offered by delivery address service **106**. Note that in alternate variations of the present embodiment, if desired, one substitute mailing address **221** (formed using a virtual (fictitious) delivery address) may also be assigned for use by purchaser **100** for each transaction or purchase made by purchaser **100**.

As before, the assignment of a substitute delivery address **221** may also include the assignment of a substitute email address (not shown) for purchaser **100**. The substitute email address may designate an email address of delivery address service **106** as the recipient of any electronic communication, and further protect the email address of purchaser **100**. The association between the assigned substitute email address and the user's actual email address may in like manner be stored in the earlier described table/view data structure **230**. Accordingly, electronic communication such as order confirmation and so forth,

between business **102** and purchaser **100** may also be facilitated by delivery address service **106** without revealing the email address of purchaser **100**.

Once purchaser **100** purchases goods **210** for delivery, as with the embodiment of **Fig. 2**, purchaser **100** receives a confirmation of the purchase from business **102** (operation **34**). The confirmation may include information such as, but not limited to, identity of business **102**, quantity, description, and method of delivery for purchased goods **210**, in particular, the delivery service utilized by business **102**.

As alluded to earlier, the confirmation may be received by purchaser **100** directly, or by way of the substitute email address of delivery address service **106**. In the former embodiment, the confirmation information is also relayed to delivery address service **106** by purchaser **100** (operation **35**). Alternatively, for the later embodiment, delivery address service **106** may retain a copy of the relevant information before forwarding the confirmation information to purchaser **100**.

Thereafter, delivery address service **106** awaits notification. However, for this embodiment, delivery address service **106** awaits notification from delivery service **108** of the fact that it has been requested by online business **102** to deliver purchased goods **210**. In the meantime, as before, online business **102** communicates the delivery information to delivery service **108** (operation **36**). Again, this delivery information, including substitute delivery address **221** may be stored in database **117** of delivery service **108**. In response, upon recognition of the special nature of the delivery address, i.e. the delivery address being a virtual

delivery address of delivery address service **106**, delivery service **108**, instead of proceeding with the delivery of the purchased goods **210**, notifies delivery address service **106** instead (operation **37**). In response, delivery address service **106** provides delivery service **108** with the real delivery or mailing address of purchaser **100**.

In one embodiment, the exchange includes delivery service **108** providing delivery address service **106** with the identification of purchaser **100**, allowing delivery address service **106** to look up, and provides in return the real delivery/mailing address of purchaser **100**. Upon having been provided with the real delivery/mailing address of purchaser **100**, delivery service **108** proceeds to deliver the purchased goods to purchaser **100**, e.g. by way of transportation means **215** (operations **38-39**).

Accordingly, as with the earlier embodiment, a purchaser or consumer **100** may purchase goods online from a business web site, and receive the purchased goods without disclosing the purchaser's address to the business. As before, this embodiment of the present invention may also be practiced to protect the privacy of the mailing address of a designated recipient of the purchased goods, who also happens to be a subscriber of delivery address service **106**, and his/her substitute delivery address **221** is known to purchaser **100**. The purchaser **100** may e.g. provide the recipient's substitute delivery address **221** at "check out" time instead, which in due course will be provided to delivery service **108**, and employed to obtain the real delivery or mailing address of purchaser **100**.

Referring now to **Figures 4** and **5**, wherein two flow charts illustrating the relevant aspects of delivery address service **106** in support of the embodiments of **Figs 2** and **3**, in accordance with one embodiment each, are shown, respectively. As illustrated in **Fig. 4**, upon receipt of the order confirmation information (either from purchaser **100** or online business **102**), block **430**, delivery address service **106** awaits notification from the mailbox service "hosting" the mailbox of substitute delivery address **220** (with respect to the arrival of purchased goods **210**), block **432**, in support of the embodiment of **Fig. 2**. As shown, eventually, delivery address service **106** is notified of the arrival of purchased goods **210**. In response, delivery address service **106** determines the identity of purchaser **100**, notifies purchaser **100** of the arrival accordingly, block **434**.

As for the embodiment of **Fig. 5**, upon receipt of the order confirmation information (either from purchaser **100** or online business **102**), block **530**, delivery address service **106** awaits notification from delivery service **108** with respect to its receipt of a request by business **102** to deliver purchased goods **210**, block **532**, in support of the embodiment of **Fig. 3**. As shown, eventually, delivery address service **106** is notified of the request to deliver purchased goods **210**. In response, delivery address service **106** determines the identity and the mailing address of purchaser **100**, and provides the information to delivery service **108**, block **534**.

Figure 6 illustrates an example server suitable for use to delivery address service **106** of **Fig. 1**, in accordance with one embodiment. As shown, server **600** includes one or more processors **602** and system memory **606**. Additionally, server **600** includes mass storage devices **607** (such as diskette, hard drive, CDROM and so forth), GPIO **608** (for interfacing with I/O devices such as keyboard, cursor control and so forth) and communication interfaces **612** (such as network interface cards, modems and so forth). The elements are coupled to each other via system bus **614**, which represents one or more buses. In the case of multiple buses, they are bridged by one or more bus bridges (not shown). Each of these elements performs its conventional functions. In particular, system memory **604** and mass storage **606** are employed to store a working copy and a permanent copy of the programming instructions implementing delivery address service **106**.

Accordingly, methods and apparatuses for protecting the privacy of the mailing addresses of online purchasers of goods have been described. While the present invention has been described in terms of the above-illustrated embodiments, the invention is not limited to the embodiments described. The present invention can be practiced with modification and alteration within the spirit and scope of the appended claims. Thus, the description is to be regarded as illustrative instead of restrictive on the present invention.